

# Sebastian Zajac

Assistant Professor and Big Data Expert

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## Profile

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I'm a theoretical physicist and an assistant professor at the Decision Analysis and Support Unit at SGH Warsaw School of Economics (Poland). I am a researcher with a keen focus on the practical business applications. My primary research areas encompass Quantum Machine Learning and Quantum Computing on NISQ devices, which reflect my dedication to exploring the potential of QC in solving complex problems. Additionally, I am deeply involved in the field of streaming data analytics, and graph embeddings.

## Professional Experience

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- Big Data Expert in the Credit Risk Information Department** *PKO BP* **Warsaw, PL** 09/2021 - present
- Develop Python tools for Data Scientists' coworkers using Kedro, Pandas, Polars, and Apache Spark.
  - Work with BigQuery, Jenkins, Apache Airflow, Dataproc, Dataflow, Seldon, MLFlow, and other GCP technologies.
- Assistant Professor, SGH Warsaw School of Economics** **Warsaw, PL** 04/2019 - present
- Lecturer: Introduction to Quantum Machine Learning, Real-time Data Analytics, and Data Warehouses with SAS.
  - Developing outlier detection methods for graphs and time series data using Deep Learning and Quantum Variational Algorithms
  - My programming and data analysis tasks are typically carried out using Julia, Python, and SAS.
- Mentor, QPoland, Quantum AI Foundation** **Warsaw, PL** 01/2020 - present
- Quantum computing courses.
- Theoretical Physics Consultant** *Ordinal Research Institute* **Pasadena, USA** 03/2022 - 07/2022
- <https://knotphysics.net> - new, interesting theory
- Data Science Engineer, Algomine AI** **Warsaw, PL** 12/2019 - 04/2021
- Working on data science projects for businesses based on big data platforms.
  - Providing training on SAS and Python programming languages to companies.
  - Combining insurance and banking models on the SAS platform and have also worked on product allocations.
  - I prepared environments for real-time data analysis using Python, Kafka, Spark, and Apache Flink.
- Assistant Professor, Pre-Dean** *Cardinal Stefan Wyszyński University* **Warsaw, PL** 04/2013 - 03/2019
- Lecturer: Data Warehousing, Data Mining, Statistics, Actuarial Methods, Financial Engineering, Mathematica and IT labs.
  - Responsible for maintaining the infrastructure and coordinating cooperation with external companies.
- Data Analysis Expert, AMA Institute** **Warsaw, PL** 10/2017 - 05/2019
- Python package Advanced Scorecard Builder for Scorecard Models generator.
  - Analytics env with dashboards for JPK files analysis with Django framework.
- Junior Front-End Developer, Oracle Maxymiser** **Warsaw, PL** 11/2015 - 02/2016
- A/B test for web applications in JavaScript, HTML5, CSS3.
- Lecturer** *GoWork* **Warsaw, PL** 07/2013 - 09/2015
- Lecturer: Web applications development, Programming with HTML5, CSS, MySQL, PHP, JavaScript, JQuery, Smarty, Wordpress, CodeIgniter
- Statistical Analyst** *Biostat* **Rybnik, PL** 11/2011 - 02/2012
- Statistical reports from medicine data. Data preparation and presentation.
- Software tester** *Wasko S.A.* **Gliwice, PL** 07/2011 - 10/2011
- Work with JIRA, TESTLINK, SharePoint for acceptance, functional and regression tests.

## Education

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- Data Mining and Statistical Analysis in Business** *SGH Warsaw School of Economics* **Warsaw, PL** 2015-2016
- Ph.D. in Physics** *University of Silesia* **Katowice, PL** 2007-2013
- Master's Degree in Econophysics** *University of Silesia* **Katowice, PL** 2005-2007
- Bechelor's Degree in Econophysics** *University of Silesia* **Katowice, PL** 2002-2005
- Music** *Public Music School I i II* **Rybnik, PL** 1994-2004

## Skills

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- **Operating systems:** Linux, OS X, Windows
- **Programming Languages:** Python, Julia, R, SAS, Bash, C++, PHP, JavaScript, SQL
- **Github account:** <https://github.com/sebkaz>
- **Markup Languages:** LaTeX, HTML5, CSS3
- **Version Control:** Git, CI/CD, Jenkins, Apache Airflow
- **Cloud env:** GCP, AWS, Azure
- **Soft Skills:** Presentation, Planning, Organized, Creative Problem-Solving, Teamwork, Active Listening, Adaptability, Analytical Thinking

## Languages

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- **Polish** [Native]
- **English** [B2] - Learning